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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Chich Ou-Yang

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PEARNE & GORDON LLP

1801 EAST 9TH STREET

SUITE 1200

CLEVELAND, OH 44114-3108

EXAMINER

JOLLEY, KIRSTEN

ART UNIT

PAPER NUMBER

1762

DATE MAILED: 06/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/725,795

Applicant(s)

OU-YANG, CHIEH

Examiner

Kirsten C. Jolley

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.  
4a) Of the above claim(s) 8-13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 4/11/05.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### *Election/Restriction*

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-7 and 14, drawn to a method for distributing a viscous liquid, classified in class 427, subclass 240.
  - II. Claims 8-13, drawn to an apparatus for thermal conditioning a liquid, classified in class 118, subclass 52.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another and materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the apparatus can be used to practice another process, for example the apparatus can be used to apply a non-viscous liquid such as a solvent or cleaning solution or etchant, or a powder coating material.
3. Because these inventions are independent or distinct for the reasons given above and have acquired a separate status in the art in view of their different classification, restriction for examination purposes as indicated is proper.
4. During a telephone conversation with Michael Garvey on June 23, 2006 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-7 and 14. Affirmation of this election must be made by applicant in replying to this Office action. Claims

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8-13 have been withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

***Specification***

5. The disclosure is objected to because of the following informalities: On page 3 of the specification, line 6, it appears that “hafer” should be --wafer--.

Appropriate correction is required.

***Drawings***

6. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: reference number 5 in Figure 1. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Objections***

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7. Claim 2 is objected to because of the following informalities: The period is missing at the end of claim 2. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 1-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, line 9, the phrase “in a specific way” renders the claim vague and indefinite because it is not known what this phrase requires or in what way the viscosity is influenced.

In claims 6 and 7, the term “sub sources” render the claims vague and indefinite because it is not known to the Examiner what a “sub source” is, and the specification does not define the term. For the purpose of examination, “sub sources” has been interpreted as thermal sources.

***Claim Rejections - 35 USC § 102***

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 1, 3, and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Shirley (US 6,322,626).

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Shirley discloses a method of distributing a viscous liquid over a surface of a substrate by a spin coating process comprising: placing a substrate horizontal on a support; applying a viscous liquid onto a surface of the substrate; rotating the substrate to distribute the liquid radially outwards; and conditioning the liquid on the substrate thermally to influence its viscosity locally. Shirley teaches that gas jets may be used to heat or cool the substrate either during coating or prior to coating (see Abstract, col. 3-5, and col. 6, lines 60-64).

12. Claims 1-2, 4-6, and 14 rejected under 35 U.S.C. 102(b) as being anticipated by Thakur (US 6,174,651).

Thakur discloses a method of distributing a viscous liquid over a surface of a substrate by a spin coating process comprising: placing a substrate horizontal on a support; applying a viscous liquid onto a surface of the substrate; rotating the substrate to distribute the liquid radially outwards (col. 6, lines 13-20); and conditioning the liquid on the substrate thermally to influence its viscosity locally. Thakur teaches and illustrates using two lamps 24, 26 which can emit optical energy by visible light and which are placed above the surface of the substrate (col. 7, lines 10-23 and Figure 1A).

13. Claims 1, 4-7, and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Kim et al. (US 5,932,009).

Kim et al. discloses a method of distributing a viscous liquid over a surface of a substrate by a spin coating process comprising: placing a substrate horizontal on a support; applying a viscous liquid onto a surface of the substrate; rotating the substrate to distribute the liquid

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radially outwards; and conditioning the liquid on the substrate thermally to influence its viscosity locally. Kim et al. teaches using infrared radiation to locally heat the coated substrate (col. 4, lines 48-65). Kim et al. teaches that a plurality of optical cables for guiding infrared radiation may be positioned at different radial locations under the chuck (see Figure 5 and col. 5, lines 25-31).

### *Conclusion*

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Takekuma et al. (US 5,580,607) is cited for its teaching of locally heating or cooling a substrate during spin coating, where different radial locations are heated/cooled to different temperatures.

Gurer et al. (US 6,254,936) and Mandal et al. (US 6,238,735) are cited for their teachings of spin coating apparatus capable of supplying temperature-controlled (heated or cooled) gas/vapor from above the substrate.


Ratliff et al. (US 2002/0011478) is cited for its teaching of heating a coated substrate by a stream of heated gas above the substrate.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kirsten C. Jolley whose telephone number is 571-272-1421. The examiner can normally be reached on Monday to Wednesday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Kirsten C Jolley  
Primary Examiner  
Art Unit 1762

kcj